

## Status

Current problems being kept track of at:

<http://ncdf76.fnal.gov/~chlebana/daq/cs1Upgrade/problems.html>

## Hardware Tests

### Disk IO

Have been running concurrent Disk IO tests

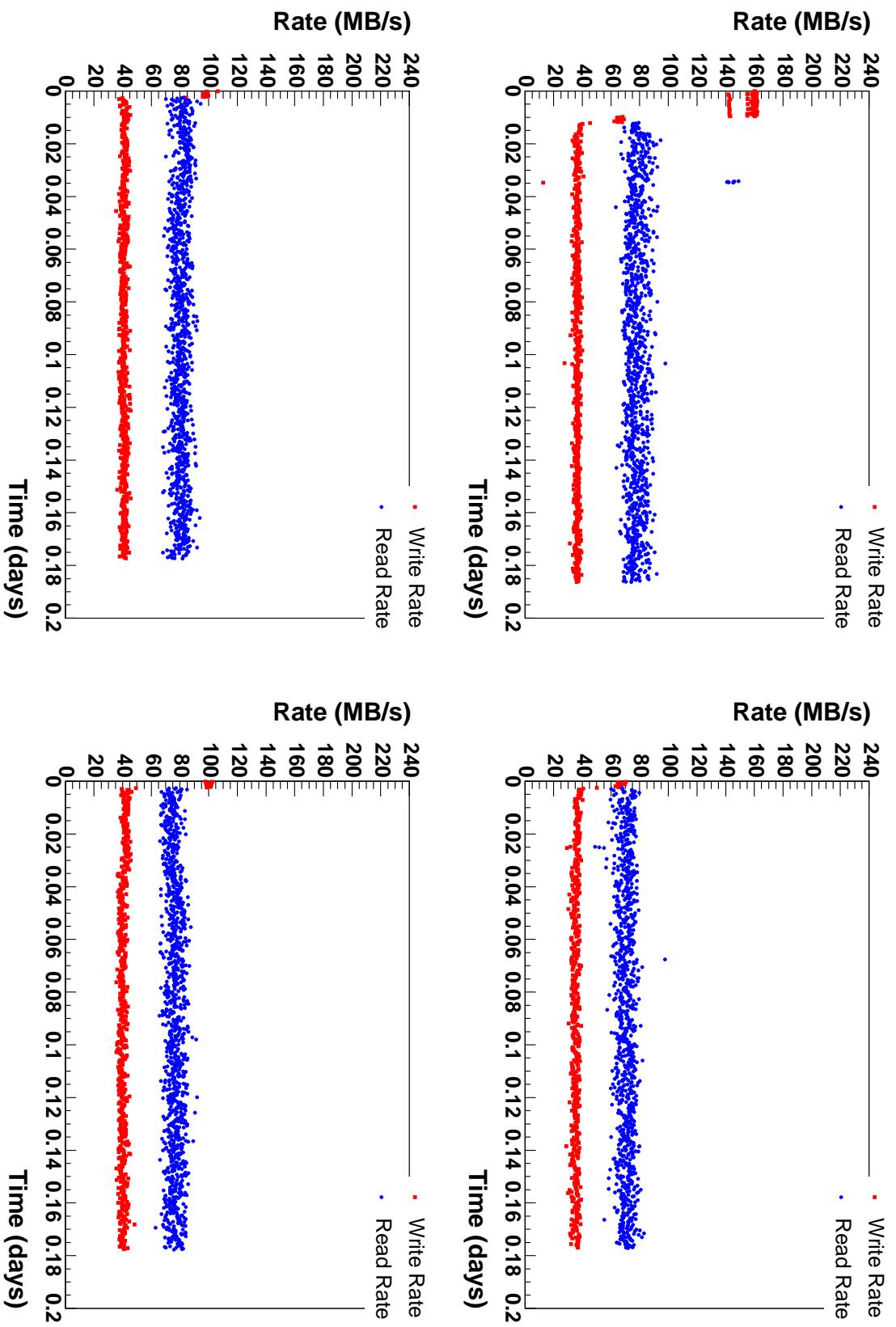
b0csl26 had filesystem errors (several times):

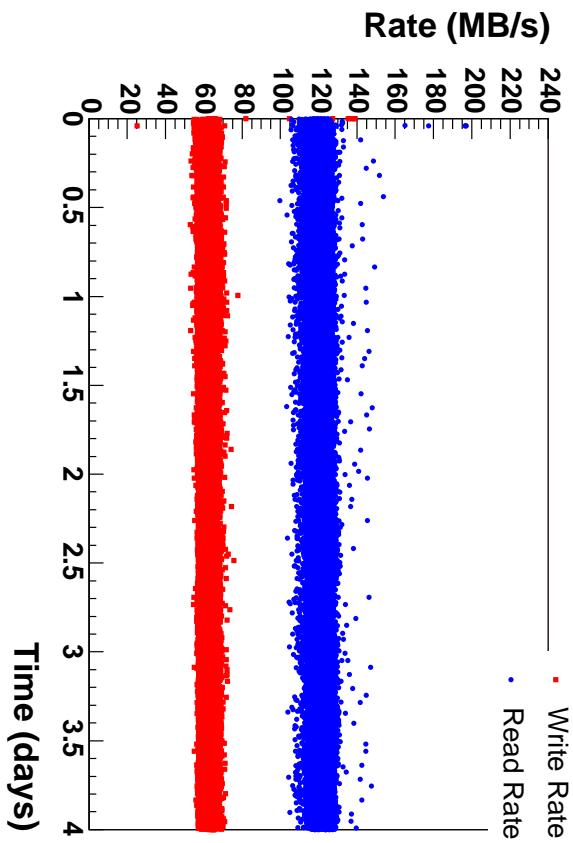
"Corruption of in-memory data detected"

→ May be isolated to a particular LUN (sata1r1l1)

## Worst case scenario

4 PCs connected to one SATABeast accessing 4 separate RAIDs





Have been running long term tests in various configurations  
 Here we used 4 PCs writing to 2 SATABeast through 4 controllers  
*So far looks good!*

Total Disk Bandwidth (8 loggers): > 300 MB/s

## Network

Had several kernel panics on b0csl120 (Receiver) when using the sky2 driver with the syskconnect NICs

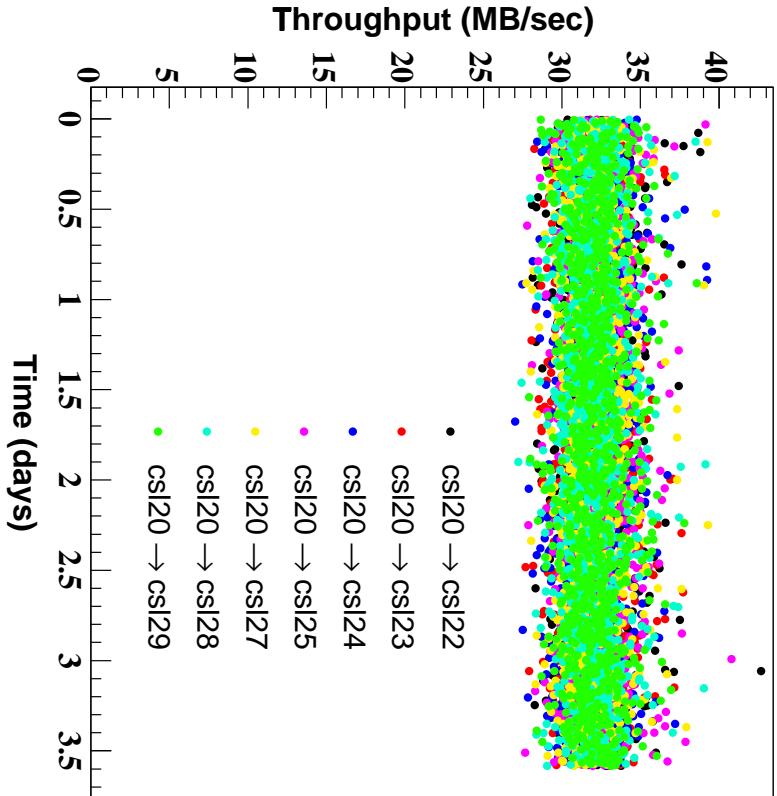
Had network drop out also when using the sky2 driver on logger nodes

Changed to the sk98lin driver - so far ok. We need to use the latest version of the driver.

sk98lin driver had problems with bonding two NICs. For long term test used the onboard NICs (e1000 driver) with bonding. We purchased 5 Intel Pro/1000 MT NICs (e1000) and are currently running long term tests...

### Options:

- 1) Use Intel NICs in Reciever (need bonding)  
    Use Syskconnect + sk98lin driver in logger
- 2) Purchase all Intel NICs  
    Use onboard NIC for 236 subnet  
    2 NICs/Logger = 18 NICs  
    4 NICs/Receiver = 8 NICs



Network bandwidth:  
 $\sim 220$  MB/s

This is for the input path...

Need to test output path (215  
subnet to Feynman)

## Integration Tests

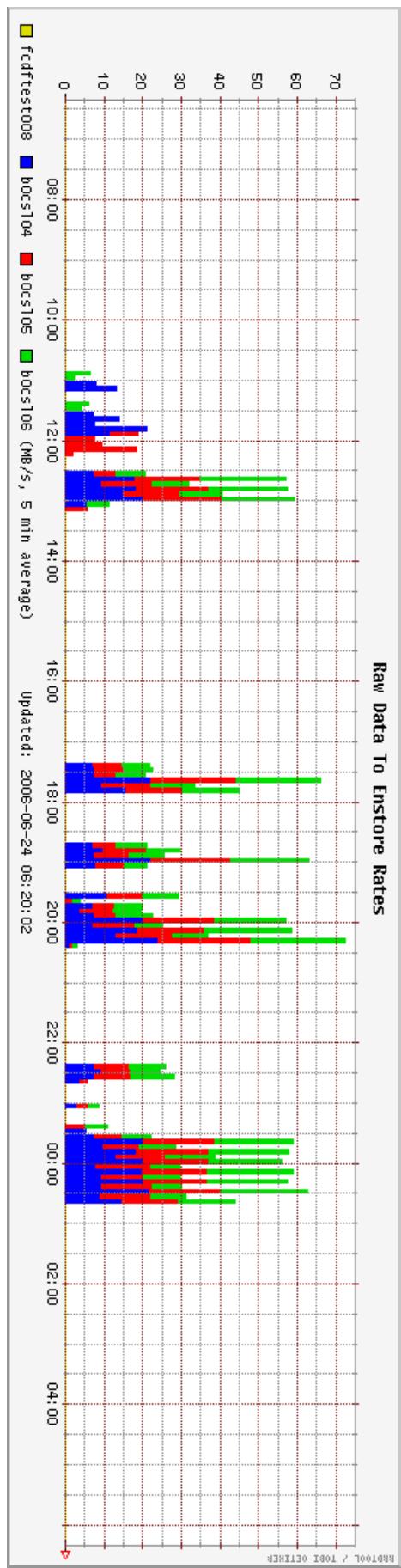
Sorted out account issues, *accounts reside on main file server*

Tested the full chain on the prototype system

Data send from L3Sender to Receiver to three logger nodes

Data picked up by stager and send to null mover in Feynman

Saw an average 40 MB/s when using 3 logger nodes  
*Limited by how fast the L3Sender can send data...*



## Logger process crashes:

```
76:b0csl126 % Generating stack trace...
0x0804ae8e in <unknown> from
/cdf/onln/home/csl/csl_code_b0csl120/build_csl_2006_0626/
    cs-logger/bin/i686-linux/csl_logger
0x004c0341 in <unknown> from /lib/tls/libpthread.so.0
0x0700046fe in __clone + 0x5e from /lib/tls/libc.so.6
```

We have also compiled and run the logger software on the new PCs (using 4 logger nodes)

→ *Required install of missing libraries/some shared object library issues had to be sorted out.*

```
b0cs126.fnal.gov>pwd  
/mnt/sata2r111/logger/ace/13  
b0cs126.fnal.gov>ls  
total 80989172  
-rwxrwxr-- 1 cslace cdf 807434700 Jun 27 12:41 e_115143.0070time  
-rwxrwxr-- 1 cslace cdf 134 Jun 27 12:42 e_115143.0070time.db  
-rwxrwxr-- 1 cslace cdf 834051480 Jun 27 12:42 e_115143.0096time  
-rwxrwxr-- 1 cslace cdf 134 Jun 27 12:42 e_115143.0096time.db  
-rwxrwxr-- 1 cslace cdf 897051540 Jun 27 12:42 e_115143.0123time  
-rwxrwxr-- 1 cslace cdf 134 Jun 27 12:43 e_115143.0123time.db  
-rwxrwxr-- 1 cslace cdf 854813700 Jun 27 12:43 e_115143.0162time  
-rwxrwxr-- 1 cslace cdf 134 Jun 27 12:44 e_115143.0162time.db  
-rwxrwxr-- 1 cslace cdf 907612380 Jun 27 12:44 e_115143.0201time  
-rwxrwxr-- 1 cslace cdf 134 Jun 27 12:44 e_115143.0201time.db  
...
```

## Additional purchases

- 5 Intel NICs (arrived)
- 1 RAID controller (arrived)
- 1 Cyclades terminal server (arrived)
- 2 Disks (Procard)
- 1 Spare receiver (With Procurement)
- 1 Spare Fibre Channel Switch (With Procurement)  
(With Procurement)
- 16 SFP (With Procurement)
- 2 Fibre channel HBAs (With Procurement)
- 2 CISCO Switches (Just submitted)
- Fibre cables

These are mostly to help make the system redundant and more reliable.

## Next steps

Move equipment to new system (today!):

- *Move Fibre Channel HBA*
- *Move 215 switch*
- *Move DotHill array*

Run more complete burnin tests on final configuration

Start using the new system

Fix logger process crash

Connect L3 output

Run 8 logger node integration test, using DAQ

Optimize performance and improve robustness and reliability

Update monitoring software